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| EXAMINER | |
|---|---|
| MENBERU, BENIYAM | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2625 | |

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/843,703 | HAMA ET AL. | |
| | Examiner | Art Unit | |
| | Beniyam Menberu | 2625 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3,5,6,8,9,11,12,14,15,17,18 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6,8,9,11,12,14,15,17,18 and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

### *Response to Arguments*

1. Applicant's arguments, see Remarks, filed September 26, 2006, with respect to the rejection(s) of claim(s) 1, 5, 8, 11, 14, and 17 under U.S. Patent No. 6219382 to Kikuchi et al in view of U.S. Patent No. 6115494 to Sonoda et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of JP 11-075073 to Inoue.

### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 5, 8, 14, and 17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4. Claims 8 and 17 should read "A computer readable medium storing a computer program comprising the steps of:"

5. Claims 5 and 14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims are directed to a seemingly patentable process ("method") but seek patent protection for an abstract idea of "A recording medium to be executed by a computer storing a program" as evident by claims 8 and 17.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 20-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 20 recites the limitation "the image value" in line 4. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 21 recites the limitation " the image value " in line 4. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 22 recites the limitation " the image value " in line 5. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 23 recites the limitation " the image value " in line 4. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 24 recites the limitation " the image value " in line 4. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 25 recites the limitation " the image value " in line 5. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 11, 12, 14, 15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-075073 to Inoue.

Regarding claims 11, 14, and 17, Inoue discloses an image processor comprising:

a first decision controller which decides whether input color gradation value of a target pixel exist in first ranges (paragraph 24, 25, 26; Equation 2 shows range "<α" and "β<" for gradation of r, g, b);

a second decision controller which performs calculation on the input color gradation value of the target pixel in linear operation of a plurality of color component values and decides whether results of the calculation exist in second ranges different from the first ranges (paragraph 25 and 26; equation 1 shows linear operation on r, g, b signals; the range is "<k");

a color decision controller which decides that the target pixel has a specified color when the first decision controller decides that the color gradation value of the target pixel exist in the first ranges and the second decision controller decides that the results exist in the second ranges (paragraph 27, 28, 29, 30, 31).

Regarding claims 12, 15, 18, Inoue teaches all the limitations of claims 11, 14, and 17 respectively. Further Inoue discloses an image processor, method, and program wherein the color gradation value includes a plurality of color component gradation value and said second decision controller calculates differences between the color component gradation value of the target pixel and decides whether the differences exist in the second ranges (paragraph 24, 25, 26; equation 1).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 1, 5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6219382 to Kikuchi et al in view of JP 11-075073 to Inoue.

Regarding claims 1, 5, and 8, Kikuchi et al discloses an image processor/program (column 7, lines 63-67) comprising:

a first decision controller which decides whether input color of a target pixel exist in first ranges (column 12, lines 46-51);

a second decision controller which decides whether differences between color of the target pixel and those of pixels adjacent thereto exist in second ranges different from the first ranges (column 12, lines 51-55); and

a color decision controller which decides that the target pixel has a specified color when the first decision controller decides that the color of the target pixel exist in the first ranges and the second decision controller decides that the differences exist in the second ranges (column 12, lines 54-58). Kikuchi et al uses luminance level (column 12, lines 24-37) and color (column 12, lines 46-55). However Kikuchi et al does not disclose wherein color gradation value and difference of color gradation value is used for the color decision.

Inoue discloses wherein color gradation value and difference of color gradation value is used for the color decision (paragraph 26).

Kikuchi et al and Inoue are combinable because they are in the similar problem area of color detection.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the color gradation processing of Inoue with the system of Kikuchi et al to implement color detection using color gradation value.

The motivation to combine the reference is clear because Inoue teaches that color judgment can be achieved using the color gradation of the pixels (paragraph 7, 8).

18. Claims 2, 3, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6219382 to Kikuchi et al in view of JP 11-075073 to Inoue further in view of U.S. Patent No. 6631210 to Mutoh et al.

Regarding claims 2, 6, and 9, Kikuchi et al in view of Inoue teaches all the limitations of claim 1, 5, and 8 respectively. However Kikuchi et al in view of Inoue does not disclose an image processor, method, and program according to claim 1, wherein said second decision controller determines a maximum value among differences of color gradation value between the target pixel and the adjacent pixels thereof and decides whether the maximum value exists in the second ranges.

Mutoh et al disclose an image processor, method, and program, wherein said second decision controller determines a maximum value among differences of color gradation value between the target pixel and the adjacent pixels thereof and decides whether the maximum value exists in the second ranges (column 26, lines 29-42; column 32, lines 24-32).

Kikuchi et al, Inoue, and Mutoh et al are combinable because they are in the similar problem area of color detection.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the maximum value detection of Mutoh et al with the system of Kikuchi et al in view of Inoue to implement accurate color detection system.

The motivation to combine the reference is clear because Mutoh et al teaches that this maximum value can be used in detection of deep color area (column 32, lines 38-46).

Regarding claim 3, Kikuchi et al in view of Inoue teaches all the limitations of claim 1. Further Mutoh et al disclose an image processor, further comprising an edge detector which calculates differences in the color gradation value between the target pixel and a plurality of adjacent pixels thereof in a direction and decides a position of an edge based on the differences (column 26, lines 29-42; column 37, lines 14-28; column 47, lines 42-50).

19. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6219382 to Kikuchi et al in view of JP 11-075073 to Inoue further in view of U.S. Patent No. 6115494 to Sonoda et al.

Regarding claims 20-22, Kikuchi et al in view of Inoue teaches all the limitations of claims 1, 5, and 8 respectively. However Kikuchi et al in view of Inoue does not disclose the image processor according to claim 1, further comprising:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller; and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them.

Sonoda discloses:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller (column 7, lines 59-67; column 8, lines 37-65; column 11, lines 10-24; The element reads on "marks 2" shown in Figure 1. The marks 2 have triangular shape. ); and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them (Figure 5 shows the device wherein the pattern detector 17 detects pattern (column 14, lines 30-34) based on the extracted pixels from output 13c (column 10, lines 43-67; column 11, lines 1-9). The extracted pixels from output 13c are based on the detection of the colors of marks by reference 13a and 13b which make up the pattern of Figure 1. Thus the pattern is detected based on the extracted pixels from the binary processing unit 13 shown in Figure 5(column 13, lines 1-11, lines 23-30; column 14, lines 20-43). In column 11, lines 30-34, the pattern recognition is related to recognizing the marks using mark shape extraction unit 13a since the marks form the pattern (column 8, lines 36-40) that is to be detected. 13a is used for accuracy purpose in conjunction with 13b which detects the color of marks).

Kikuchi et al, Inoue, and Sonoda et al are combinable because they are in the similar problem area of color detection.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the extraction controller of Sonoda et al with the system of Kikuchi et al in view of Inoue to implement color based pattern recognition.

The motivation to combine the reference is clear because for pattern detection it is necessary to implement the system of Sonoda et al in addition to the color detection system of Kikuchi et al in view of Inoue to provide for an accurate pattern detection system (Sonoda et al: column 8, lines 45-47, lines 60-62).

20. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-075073 to Inoue in view of U.S. Patent No. 6115494 to Sonoda et al.

Regarding claims 23-25, Inoue teaches all the limitations of claims 11, 14, and 17 respectively. However Inoue does not disclose the image processor according to claim 11, 14, and 17 respectively, further comprising:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller; and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them.

Sonoda et al discloses:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller (column 7, lines 59-67; column 8, lines 37-65; column 11, lines 10-24; The element reads on "marks 2" shown in Figure 1. The marks 2 have triangular shape. ); and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them (Figure 5 shows the device wherein

the pattern detector 17 detects pattern (column 14, lines 30-34) based on the extracted pixels from output 13c (column 10, lines 43-67; column 11, lines 1-9). The extracted pixels from output 13c are based on the detection of the colors of marks by reference 13a and 13b which make up the pattern of Figure 1. Thus the pattern is detected based on the extracted pixels from the binary processing unit 13 shown in Figure 5(column 13, lines 1-11, lines 23-30; column 14, lines 20-43). In column 11, lines 30-34, the pattern recognition is related to recognizing the marks using mark shape extraction unit 13a since the marks form the pattern (column 8, lines 36-40) that is to be detected. 13a is used for accuracy purpose in conjunction with 13b which detects the color of marks).

Inoue and Sonoda et al are combinable because they are in the similar problem area of color detection.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the extraction controller of Sonoda et al with the system of Inoue to implement color based pattern recognition.

The motivation to combine the reference is clear because for pattern detection it is necessary to implement the system of Sonoda et al in addition to the color detection system of Inoue to provide for an accurate pattern detection system (Sonoda et al: column 8, lines 45-47, lines 60-62).

### *Other Prior Art Cited*

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6731792 to Tanaka discloses color image processing.

U.S. Patent No. 6873441 to Kuwabara et al discloses gradation processing of color images.

U.S. Patent No. 6128407 to Inoue et al disclose image processor.

### *Conclusion*

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

> A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (571) 272-7471.

The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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***Patent Examiner***

Beniyam Menberu
BM
12/09/2006

KAWilliams
KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER